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Docket No. 9539-000055

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Michalek et al :

Serial No. 10/085,743 :

Group: 2862

Filed: February 26, 2002 :

Examiner: Reena Aurora

For: **Press-In Exciter Ring Assembly** :

RECEIVED
MAR 09 2004

Director of the U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, Virginia 22313-1450

**AFFIDAVIT OF JOHN STANLEY MICHALEK
AND MATTHEW PERRY BROWN**

Sir:

Being duly sworn, the undersigned hereby states, that to the best of our knowledge and belief:

1. We are the joint inventors named in the above-identified patent application and are employees of American Axle & Manufacturing (hereinafter AAM) the assignee of this invention.

2. It is our understanding that the subject matter currently being claimed in this application relates to an exciter ring assembly; an axle assembly with an exciter ring; and a vehicle with an exciter ring.

3. It is our further understanding that the claims in this application stand rejected by the Examiner under 35 USC 102(e) as being allegedly anticipated by U.S. Patent No 6,549,001 to Dobbs et al which matured from an application first filed on November 2, 2001.

4. We conceived the invention claimed in our application before November 2, 2001, and were diligent in working with our attorneys to constructively reduce our invention to practice by way of filing a patent application disclosing our invention on February 26, 2002, application No. 10/085,743.

5. Exhibit A is a copy of an Invention Disclosure that we submitted to the AAM patent department. The dates and some other information not relating to the conception of the claimed subject matter have been blocked out. However, the dates in the "Conception of Invention" section is before November 2, 2001, as are the dates adjacent to the signatures.

6. Exhibit B is a copy of a letter dated January 29, 2001 from AAM's in-house patent counsel to W. R. Duke Taylor, Esq., outside patent counsel whose firm prepared our patent application.

7. It was our understanding that AAM's in-house counsel had a search conducted and this was reported in the letter of Exhibit C dated February 19, 2001.

8. A draft of the application was prepared by outside counsel and sent to us for our review on August 17, 2001 as evidenced by Exhibit D.

9. We reviewed the application and provided our comments to outside counsel who finalized the application and returned it to AAM's in-house counsel on January 21, 2002, as evidenced by Exhibit E.



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MAR 09 2004

10. The subject patent application was filed on February 26, 2002.


11. Thus, the foregoing evidence proves conception and diligence towards constructive reduction to practice. This evidence should not be construed as an admission, however, that there was no actual reduction to practice in this invention.

12. Therefore, the foregoing evidence indicates that Applicants' invention was prior to the effective filing date of U.S. Patent No. 6,549,001.


John Stanley Michalek

State of Michigan)
County of Wayne) ss.

On this 27th day of February, 2004, before me personally appeared the foregoing individual, who executed the foregoing instrument and who acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.


Notary Public,

(seal)

Macomb Acting in Wayne County, Mi
County, State of Michigan
My Commission Expires: 08/25/05



Matthew Perry Brown

Matthew Perry Brown

State of Michigan)
County of Wayne) ss.
)

On this 27th day of FEBRUARY, 2004, before me personally appeared the foregoing individual, who executed the foregoing instrument and who acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.

K. Sue Kamil

Notary Public

Hacoma County, State of Michigan

My Commission Expires: 08/25/05

(seal)

Acting in Wayne County, Mi



**AMERICAN
AXLE &
MANUFACTURING**

Handwritten initials

RECORD OF INVENTION

AAM DEPARTMENT/LOCATION PRODUCTION ENGINEERING / TECHNICAL CENTER

FILE NO. _____

SUBJECT PRESS-IN EXCEPT RING ASSEMBLY - ADDITIONAL
PLEASE PRINT OR TYPE FEATURES

Inventor JOHN STANLEY MICHAEL Citizen of USA
FIRST NAME FULL MIDDLE NAME LAST NAME

Social Security No. _____

Home Address _____
STREET CITY AND STATE ZIP CODE

AAM Address 2965 TECHNOLOGY DRIVE AAM Telephone 248-299-6514
ROCHESTER HILLS, MI. 48309-3589

Employed by (if not AAM employee) _____

Inv ntor _____ Citizen of _____
FIRST NAME FULL MIDDLE NAME LAST NAME

Social Security No. _____

Home Address _____
STREET CITY AND STATE ZIP CODE

AAM Address _____ AAM Telephone _____

Employed by (if not AAM employee) _____

Inventor _____ Citizen of _____
FIRST NAME FULL MIDDLE NAME LAST NAME

Social Security No. _____

Home Address _____
STREET CITY AND STATE ZIP CODE

AAM Address _____ AAM Telephone _____

Employed by (if not AAM employee) _____

(over)

RECORD OF INVENTION

1. This invention is disclosed in the following sketches, drawings, written description, and/or technical reports (attach copies).

THESE DOCUMENTS SHOULD PROVIDE A FULL DISCLOSURE OF YOUR INVENTION AND SHOULD BE SIGNED AND DATED BY EACH INVENTOR AND BY TWO WITNESSES WHO UNDERSTAND THE INVENTION.

2. This invention was first thought of _____ on _____
3. First sketch or drawing (attach copy) was made by JOHN MICHAEL on _____
4. First written description (attach copy) was made by JOHN MICHAEL on _____
5. This invention was first disclosed to DAVID DEBOS - CL (SEA) on _____
6. First tests (attach copy of results) were made by _____ on _____, 19____.
7. This invention was or is expected to be published or disclosed outside AAM to:
THIS FEATURE IS NOT EXPECTED TO BE EXPLICITLY on _____, 19____.
DISCLOSED OUTSIDE OF AAM / CL (SEA) on _____, 19____.
8. This invention was or is expected to be used in production starting _____ on _____, 19____.
9. In addition to those identified above, the following people can also testify to facts relating to the making of this invention:
PETER MURPHY
10. The nearest thing or things to this invention that I know of are:

I HEREBY ASSIGN THIS INVENTION TO AMERICAN AXLE & MANUFACTURING, INC. AND AUTHORIZE AMERICAN AXLE & MANUFACTURING, INC. TO FILE AN APPLICATION FOR PATENT ON MY BEHALF.

This invention was reviewed and understood by me

Peter J. Murphy
WITNESS

Elizabeth S. McGowan
WITNESS

INVENTOR SIGNATURE

INVENTOR

DATE

INVENTOR

DATE

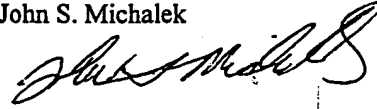
INVENTOR

DATE

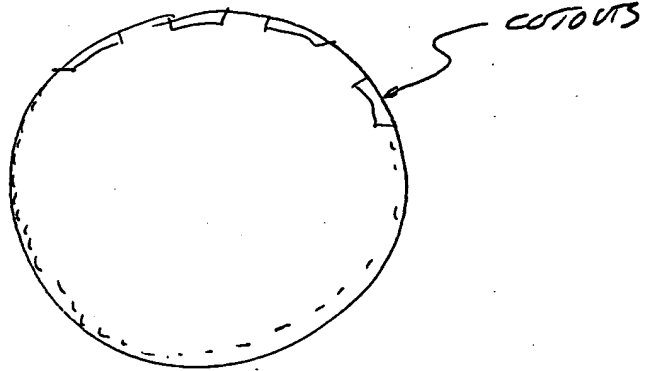
Press-In Exciter Ring Assembly – Additional Feature: Retaining ring cutouts and/or recesses

The retaining ring on the Press-In Exciter Ring Assembly when designed with cutouts and/or recesses on the outside diameter will provide an additional path for oil to flow around the Press-In Exciter Ring Assembly and thereby increase oil flow to the bearing.

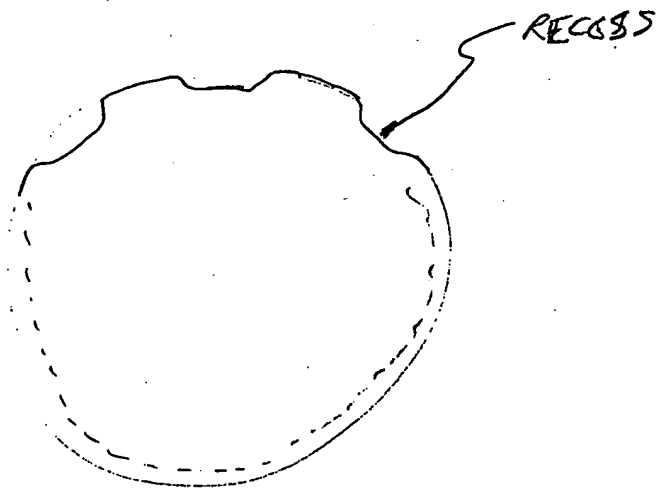
John S. Michalek

A handwritten signature in cursive script, appearing to read "John S. Michalek", written in dark ink.

(A)



(B)



RECORD OF INVENTION

1. This invention is disclosed in the following sketches, drawings, written description, and/or technical reports (attach copies).

THESE DOCUMENTS SHOULD PROVIDE A FULL DISCLOSURE OF YOUR INVENTION AND SHOULD BE SIGNED AND DATED BY EACH INVENTOR AND BY TWO WITNESSES WHO UNDERSTAND THE INVENTION.

2. This invention was first thought of _____ on _____
3. First sketch or drawing (attach copy) was made by JOHN S. MICHALEK on _____
4. First written description (attach copy) was made by JOHN S. MICHALEK on _____
5. This invention was first disclosed to MARK SPREITZER - CHICAGO RAILROAD on _____
6. First tests (attach copy of results) were made by _____ on _____
7. This invention was or is expected to be published or disclosed outside AAM to:
MARK SPREITZER - CHICAGO RAILROAD on _____
8. This invention was or is expected to be used in production starting _____ on _____
9. In addition to those identified above, the following people can also testify to facts relating to the making of this invention:

10. The nearest thing or things to this invention that I know of are:

ENTER RING PROSEDURE ON SHAFT FROM TO ASSEMBLY.

I HEREBY ASSIGN THIS INVENTION TO AMERICAN AXLE & MANUFACTURING, INC. AND AUTHORIZE AMERICAN AXLE & MANUFACTURING, INC. TO FILE AN APPLICATION FOR PATENT ON MY BEHALF.

This invention was reviewed and understood by me

Matthew A. Brown
WITNESS

Michael A. A
WITNESS

John S. Michalek
INVENTOR SIGNATURE

Matthew P. Brown
INVENTOR

DATE

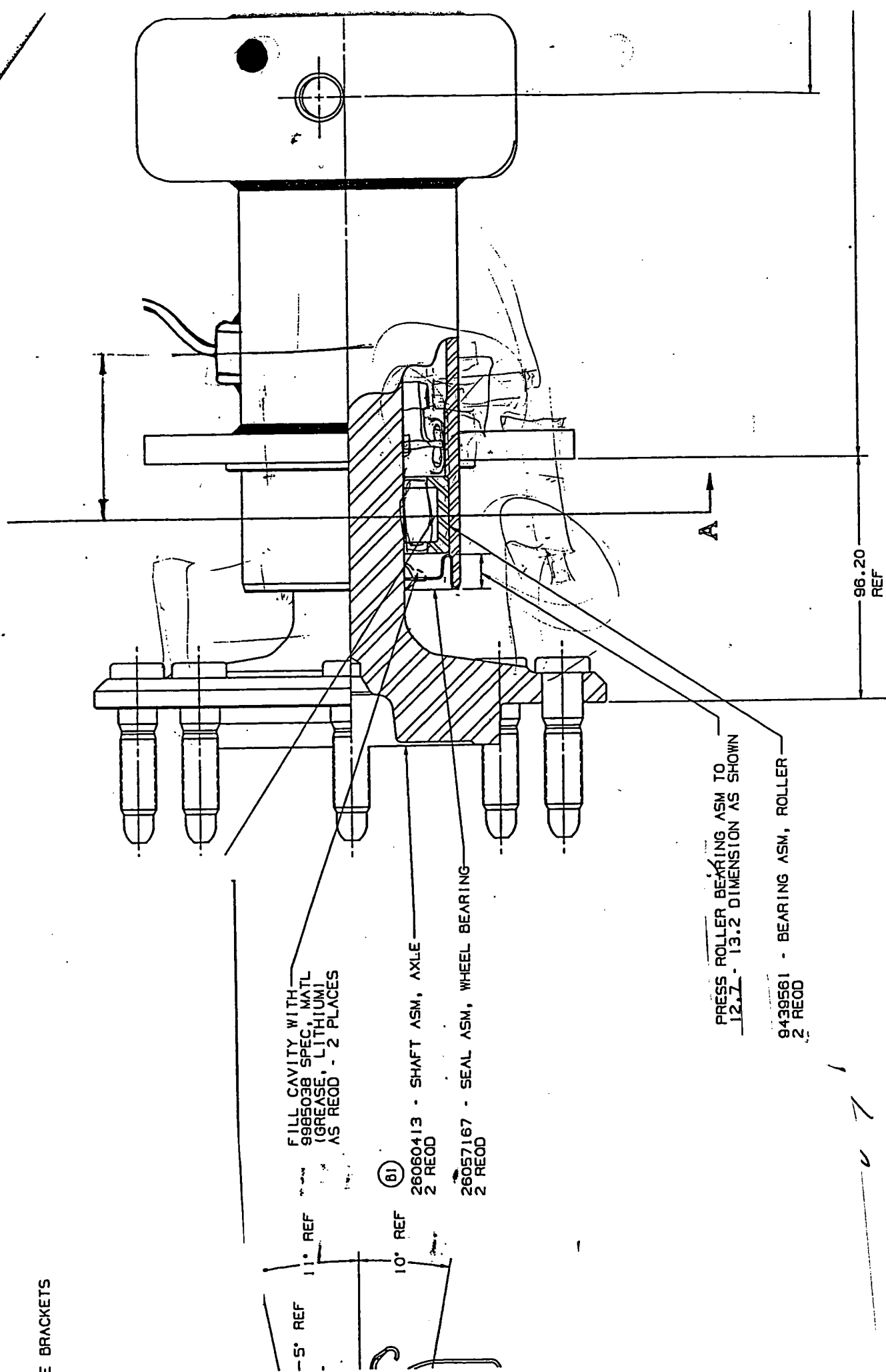
INVENTOR

DATE

INVENTOR

DATE

E BRACKETS



11-200 10 M.S. 11-21-50

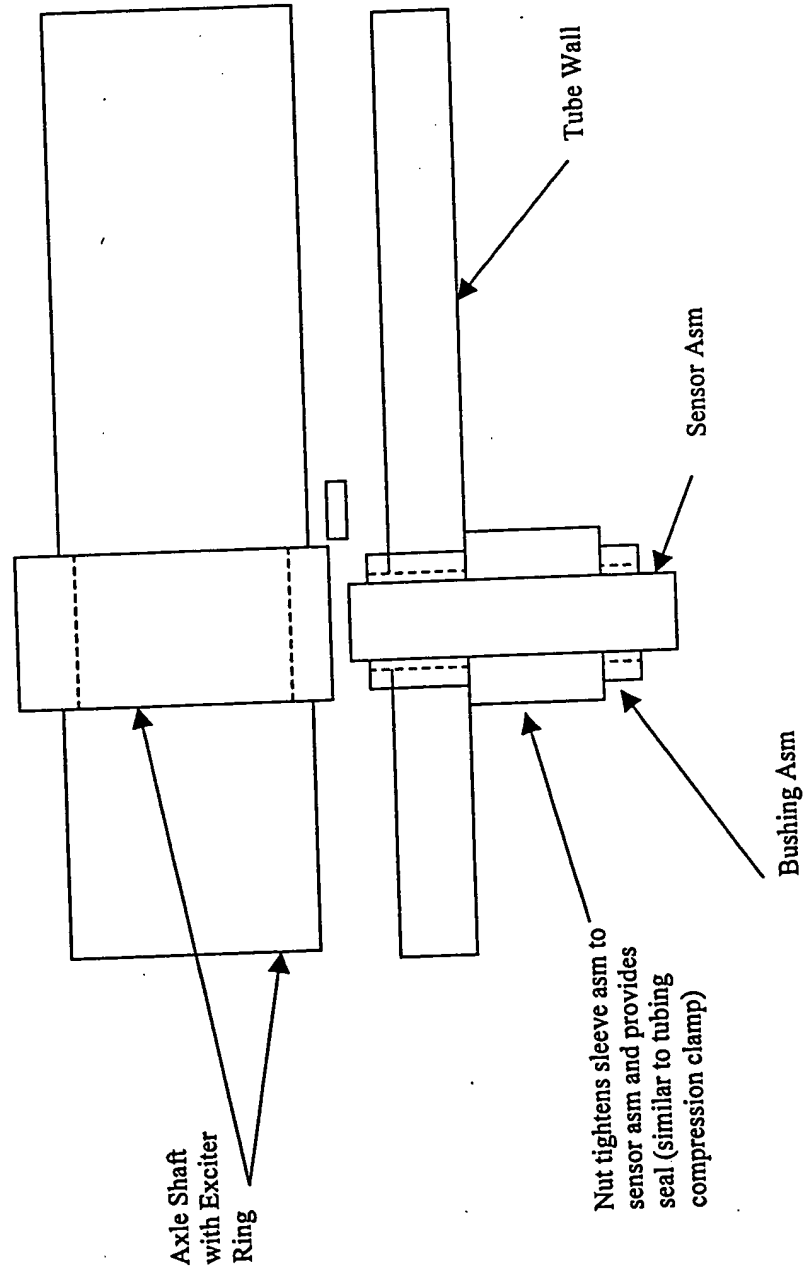
Press-In Exciter Ring Assembly

The Press-In Exciter Ring Assembly is comprised of an exciter ring (or exciter ring assembly) for shaft motion sensing which is loosely assembled to, and retained by an outer member. This outer member allows retention of the exciter ring into a single assembly called the Press-In Exciter Ring Assembly. This Press-In Exciter Ring Assembly can then be installed into a hollow member (such as an axle tube) inboard of the other components allowing the total assembly to have a larger exciter ring for speed sensing than would be possible under conventional methods.

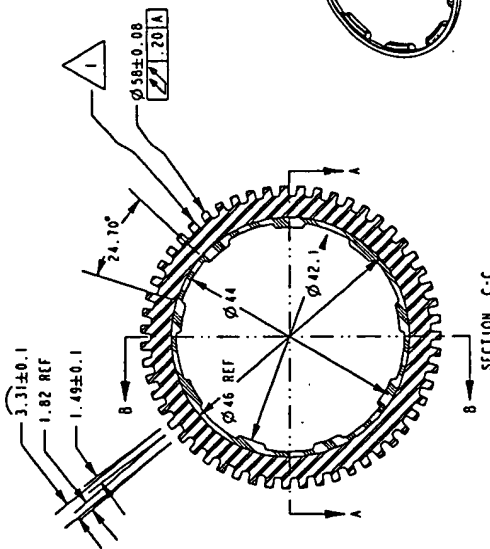
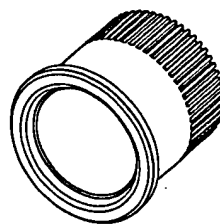
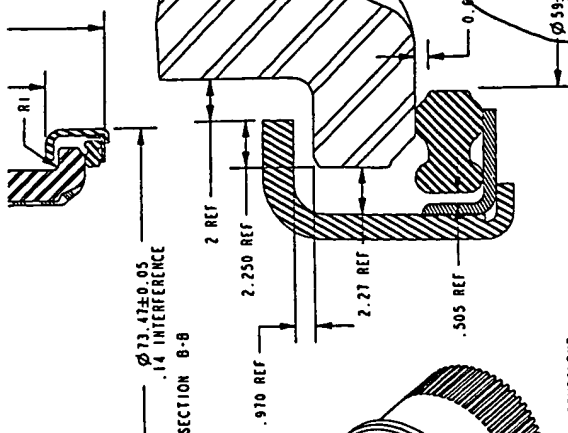
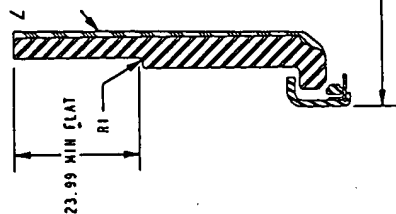
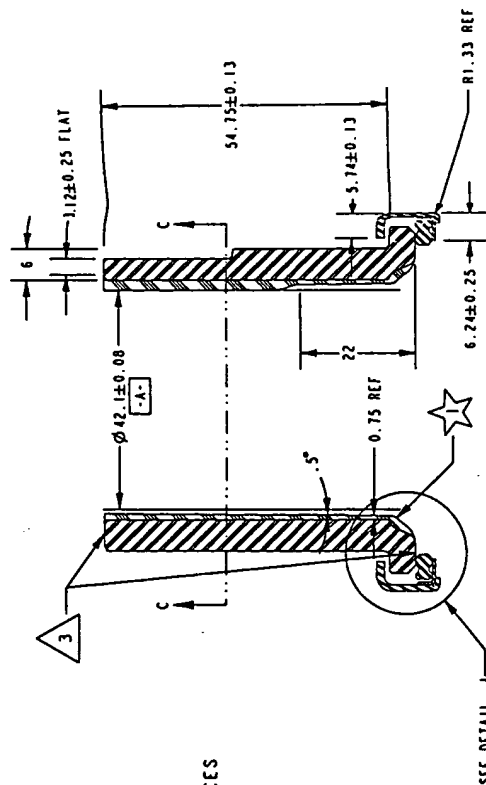
Shaft installation process: The shaft is installed through the seal and bearing, it will travel through and be retained by the exciter ring inside diameter. The axial movement of the exciter ring would be limited by the outer member, which effectively positions the exciter ring properly when the shaft reaches its final position

Additional performance of this method can be obtained through use of a variable position sensor retaining mechanism. This mechanism will allow continuously variable positioning of the sensor so as to permit minimum gap to the exciter ring.

Proposed Wheel Speed Sensing Design



☆	"CR" & "536846" & "USA" - & 9.5-- MOLDED (PRODUCTION ONLY)
△ 1	55 TEETH, EVENLY SPACED
△ 2	0.5 MAX SPRUE GATE EXTENSION (3) PLACES
△ 3	BONDED FLASH PERMITTED
△ 4	COATED WITH KRYTOX
△ 5	ALL DIMENSIONS ARE METRIC IN mm
△ 6	FINAL DIMENSIONS TO BE CONFIRMED UPON ESTABLISHMENT OF TOOLING

[illegible]

	TOLERANCES UNLESS OTHERWISE SPECIFIED	
DIAMETERS	.X	± .1
	.XX	± .05
HEIGHTS	.X	± .1
	.XX	± .05
RADIO	.X	± .1
	.XX	± .05
ANGULAR		± 30°

CUSTOMER	AMERICAN AXLE & MFG. INC
CUSTOMER PART NUMBER	1BD
APPLICATION	9.5" REAR SENSOR SYSTEM
CR SEAL TYPE	NA
SIRVENC	507

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AMERICAN
AXLE &
MANUFACTURING

WORLD HEADQUARTERS

January 29, 2001

W.R. Duke Taylor
Attorney at Law
Harness, Dickey & Pierce, P.L.C.
5445 Corporate Drive
Troy, Michigan 48098

RE: "Press-In Exciter Ring Assembly"
Record of Invention
AAM Tracking No. 01000AAM
Inventors: John S. Michalek; Matthew P. Brown

Dear Duke:

Enclosed you will find a record of invention and accompanying drawings and discussion concerning the above referenced invention. Please conduct a novelty search investigation to determine the patentability of this invention.

Should you need to discuss further with the inventors, please advise and I will schedule a meeting and/or conference call. Both inventors are located in Rochester Hills.

Kindly acknowledge receipt of the enclosed. Also, please call with any questions once you have had an opportunity to review the enclosed.

Sincerely,

Richard G. Raymond
General Counsel

CHARLES H. BLAIR
JOSEPH R. PAPP
H. KEITH MILLER
JAMES E. STEPHENSON
BERNARD J. CANTOR
CHRISTOPHER M. BROCK
RICHARD L. CARLSON
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<http://www.hdp.com>

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MICHAEL D. ZALOSKY

COUNSEL

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DONALD F. SCHERER

J. KING HARNES
1920-1977

ARTHUR W. DICKEY
1925-1964

HODGSON S. PIERCE
1927-1947

February 19, 2001

Richard G. Raymond, Acting General Counsel
American Axle & Manufacturing
1840 Holbrook Avenue
Detroit, Michigan 48212-3488

RE: Our Reference 9539-500072
AAM Tracking No. 01000AAM
Inventors: John S. Michalek and Matthew P. Brown
PRESS-IN EXCITER RING ASSEMBLY

Dear Rick:

In accordance with your letter dated January 29, 2001, we have conducted a novelty search investigation in the search room at the United States Patent Office in Washington, D.C. for the above-referenced Record of Invention. The following is a complete report of our search parameters and findings.

SUBJECT MATTER OF SEARCH

During our search, we focused on a wheel speed sensing assembly using an exciter ring, assembled into and retained by an outer member of an axle shaft. The assembly can be installed in a way as to provide a larger exciter ring for speed sensing than would be possible under conventional means.

08-17-01 16:54:00
AUG.17.2001 4:04PM

FROM: AA&M ROCH HILLS, MI TO: EWN
HARNES, DICKEY & PIERCE TROY MI

MATT
NO.145

PAGE
P.1/21

1

HARNES, DICKEY & PIERCE, P.L.C.

MARKED & RECD

Attorneys and Counselors
5445 Corporate Drive, Suite 400
Troy, Michigan 48098-2683
Phone: 248-641-1600
Fax: 248-641-0270
St. Louis, MO • Washington, D.C.

DATE: August 17, 2001

NO. OF PAGES (INCLUDING THIS PAGE): 21

FOR: Mr. Matthew P. Brown

COMPANY: American Axle & Manufacturing

FAX NO.: 299-6637

PHONE: 299-6437

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- ☐ REGULAR MAIL
☐ OVERNIGHT MAIL
☐ COURIER
☒ WILL NOT FOLLOW

FROM: W. R. Duke Taylor

Please let us know by phone or fax if you do not receive any of these pages.

COMMENTS:

MATT:

TO FOLLOW IS A DRAFT OF THE PATENT APPLICATION FOR:
PRESS-IN EXCITER RING ASSEMBLY.

PLEASE REVIEW WITH JOHN MICHALEK AND PROVIDE ME WITH YOUR COMMENTS AT YOUR EARLY
CONVENIENCE.

THANK YOU FOR YOUR ASSISTANCE.

DUKE TAYLOR

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HARNES, DICKEY & PIERCE, P.L.C.

ATTORNEYS AND COUNSELORS

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www.hdp.com

ST. LOUIS, MO

WASHINGTON, D.C.

January 21, 2002

Richard G. Raymond, General Counsel
American Axle & Manufacturing, Inc.
1840 Holbrook Avenue
Detroit, Michigan 48212-3488

RE: Our Reference 9539-000055
AAM Tracking No. 01000AAM
Inventors: John S. Michalek and Matthew P. Brown
For: **PRESS-IN EXCITER RING ASSEMBLY**

Dear Rick:

Enclosed please find a patent application for the above-referenced matter. Also enclosed is a Declaration & Power of Attorney and an Assignment, which need to be signed and dated by the inventors at the spaces next to their typed names.

Please return the entire package to me (i.e., do not separate the Declaration from the rest of the application), preferably by expedited mail, for filing in the U.S. Patent and Trademark Office at your earliest convenience.

Thank you again for your prompt attention to this matter. As always, if you have any questions regarding any of the above, please do not hesitate to contact me.

Very truly yours,



W. R. Duke Taylor

WRDT/jp